

**30 OCTOBER 1998**



**Civil Engineering**

**ENVIRONMENTAL MANAGEMENT AIR  
EMISSION INVENTORIES**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction establishes policies and procedures, and defines responsibilities for air emission management at Vandenberg Air Force Base (AFB) and at other sites owned and operated by the 30th Space Wing (30 SW). It includes, but is not limited to, annual inventories of air pollution sources; record keeping and reporting of process variables, and reporting deadlines. This instruction implements AFI 32-7040, *Air Quality Compliance*, and applies to military and non-military activities that conduct operations resulting in air emissions. **Attachment 1** explains abbreviations and Acronyms used. The Paperwork Reduction Act of 1974 as amended in 1996 and AFI 37-160, Volume 8, *The Air Force Publications and Forms Management—Developing and Processing Forms*, affects this publication.

**SUMMARY OF REVISIONS**

The revision of this publication is to meet the format standards required by the Air Force. No content material has changed. Some required format changes have been made to allow for the conversion process.

**1. Responsibilities:**

**1.1. Unit Commanders, Directors of Staff, and Contractors:**

1.1.1. Unit commanders (host and tenant), directors of staff offices, and contractors shall appoint, in writing, Environmental Managers (EMs) to maintain an accurate and up-to-date inventory of equipment and materials identified in this instruction. Appointment letters shall be submitted to 30 CES/CEV. Organizations will appoint more than one EM depending on span of control limitations. Organizations that do not conduct operations identified in this instruction are not required to appoint an EM.

**1.2. Environmental Management Flight (30 CES/CEV):**

1.2.1. Operates and maintains source and emission inventories for Vandenberg AFB and other sites owned or operated by the 30th Space Wing in accordance to AFI 32-7040.

1.2.2. Administers inventory accounts with the assistance of EMs. Provides inventory listings to EMs for annual certifications.

1.2.3. Collects operational information (e.g., operating hours, fuel usage, material usage, etc.) maintained by operators/users. Enters operational information into the air emission database.

1.2.4. Calculates an emission of air contaminates based on operational information and equipment specifications. Enters emission information into the air emissions database.

### **1.3. HazMart (30 SUPF/LGS):**

1.3.1. Provides Material Safety Data Sheet (MSDS) information, materials usage information, and shop information to 30 CES/CEV on a monthly basis.

### **1.4. Environmental Managers (EMs):**

1.4.1. Maintain accurate and up-to-date inventories of equipment and Reactive Organic Compound (ROC) -containing materials that are subject to this instruction. Equipment inventories shall be maintained in Source Inventory (SI) Accounts administered by 30 CES/CEV.

1.4.2. Ensure equipment operators and users of ROC-containing materials are maintaining the recordkeeping logs required under this instruction. Collects recordkeeping forms at the end of the calendar year and submits them to 30 CES/CEV.

**2. Source Inventory (SI) Accounts.** The EMs will maintain a complete and accurate inventory of all applicable sources of air pollution used by personnel within their functional area(s) of responsibility. Applicable sources of air pollution are defined in **Section 3** of this instruction. Inventories shall be maintained in SI Accounts administered by 30 CES/CEV. EMs shall make any additions, deletions or modifications to their account according to the procedures specified below.

**2.1. Adding Equipment.** To add equipment to a SI Account, the responsible EM shall complete the applicable SI Profiling Form and submit it to 30 CES/CEV. Equipment will be entered into a SI Account prior to its initial use or operation. The following SI Profiling Forms shall be used to add equipment to SI Accounts:

30 SW Form 154, **Abrasive Blasting Equipment**

30 SW Form 155, **Boilers and Hot Water Heaters**

30 SW Form 156, **Internal Combustion Engines**

30 SW Form 157, **Air Quality Source Profiling Internal Combustion Engine**

30 SW Form 158, **Degreasers**

30 SW Form 159, **General Emission Units**

30 SW Form 160, **Fuel Storage Tanks**

**2.2. Deleting Equipment.** EMs shall delete from their SI Account any item that has been discontinued or removed from service. Delete equipment from the inventory, the responsible EM shall notify 30 CES/CEV and request the item to be removed from their SI Account. Requests to delete items

from SI Accounts shall be submitted no later than 5 days prior to the equipment being removed from service.

**2.3. Modifying Equipment.** EMs shall identify to 30 CES/CEV any substantive modifications made to equipment 5 days prior to the modification. A substantive modification is any modification that results in a change in the equipment specifications, as identified on the applicable SI Profiling Form. Notification shall be made to 30 CES/CEV at least 120 days prior to the modification of equipment, which has an APCD permit.

**2.4. Transferring Items.** To transfer equipment from one SI Account to another SI Account, the responsible EMs shall notify 30 CES/CEV 5 days prior to the equipment transfer.

**2.5. Annual Certifications.** EMs shall certify by letter on an annual basis that their SI Account is accurate and complete. The certifications are due no later than 15 days following the end of the calendar year.

### 3. Source Requirements:

#### 3.1. Internal Combustion Engines:

3.1.1. Applicability. The requirements identified in this section apply to all stationary and portable internal combustion engines operated on Vandenberg AFB or other sites owned or operated by the 30th Space Wing.

3.1.2. Exemptions. Any internal combustion engine that meets at least one of the following conditions is exempt from the requirements identified in this section:

3.1.2.1. Engines with a maximum rated brake horsepower of 20 or less are exempt.

3.1.2.2. Engines used to propel motor vehicles, marine vessels, aircraft, aerospace vehicles, rail car movers, and construction equipment are exempt.

3.1.2.3. Auxiliary power units used on aircraft are exempt.

3.1.2.4. Lawn mowers and other lawn-care equipment are exempt.

3.1.3. SI Accounts. EMs shall maintain an accurate and up-to-date inventory of all engines that are subject to this section. Inventories shall be maintained in SI Accounts in accordance with the provisions of **Section 2**.

3.1.4. Record Keeping and Reporting. Anyone that operates an engine at Vandenberg AFB shall maintain records in accordance with the most current Fuel Use Monitoring Plan (FUMP) and the recordkeeping and reporting requirements specified below. Recordkeeping and reporting shall be the responsibility of engine operators and EMs. **Note:** All record keeping and reporting shall be in compliance with all federal, state and local regulations.

3.1.4.1. Operating Hours. Anyone that operates an engine shall monitor and record engine operating hours. Acceptable methods of monitoring engine operating hours include (1) recording hour meter readings at regular intervals and (2) estimating and recording operating hours on a daily basis. Engine operating hours shall be totaled for each month of the year. Engine operators will use the fuel service logs 1 and 2 in the FUMP to record engine operating hours.

3.1.4.2. Fuel Use. Anyone that operates an engine shall monitor and record engine fuel consumption. Acceptable methods of monitoring engine fuel consumption include (1) recording

fuel meter readings at regular intervals and (2) recording the amount of fuel dispensed into the engine's fuel tank when it is refueled. Engine operators are to use the fuel service logs continued in the FUMP to record engine fuel consumption.

3.1.4.3. Annual Report At the end of each calendar year, EMs and engine operators shall compile all recordkeeping logs maintained pursuant to this section and submit them to 30 CES/CEV. Annual reports are due no later than 15 days following the end of each calendar year.

### 3.2. Boilers and Hot Water Heaters:

3.2.1. Applicability. The requirements identified in this section apply to all fuel-fired boilers and hot water heaters (referred to hereafter as combustion units) operated on Vandenberg AFB or other sites owned or operated by the 30th Space Wing.

3.2.2. Exemptions. Any combustion unit located in the residential housing area of an installation is exempt from the requirements identified in this section.

3.2.3. Emission Standards. Except units that are part of a system that was installed or designed prior to the date of this instruction, all boilers shall meet the emission standards specified below (these standards do not apply to hot water heaters):

3.2.3.1. Boilers having a maximum heat input of less than 2 million BTUs/hr shall meet the following emission standards:

Carbon Monoxide - 200 ppmv @ 3% O<sub>2</sub>

Oxides of Nitrogen - 50 ppmv @ 3% O<sub>2</sub>

3.2.3.2. Boilers having a maximum heat input of equal to or greater than 2 million BTUs/hr, but less than 5 million BTUs/hr shall meet the following emission standards:

Carbon Monoxide - 100 ppmv @ 3% O<sub>2</sub>

Oxides of Nitrogen - 30 ppmv @ 3% O<sub>2</sub>

3.2.3.3. Boilers having a maximum heat input equal to or greater than 5 million BTUs/hr shall meet the following emission standards:

Carbon Monoxide - 50 ppmv @ 3% O<sub>2</sub>

Oxides of Nitrogen - 15 ppmv @ 3% O<sub>2</sub>

3.2.4. SI Accounts. EMs shall maintain an accurate and up-to-date inventory of all combustion units that are subject to this section. Inventories shall be maintained in SI Accounts in accordance with the provisions of **Section 2**. EMs must coordinate, with 30 CES/CEVCC all changes or modifications to combustion units, including decommissioning/deactivation.

3.2.5. Record Keeping and Reporting. The following recordkeeping and reporting requirements apply to combustion units located at Vandenberg AFB. **Note:** All record keeping and reporting shall be in compliance with all federal, state and local regulations.

3.2.5.1. Natural Gas. On a quarterly basis, 30 CES/CEOE and 30 CES/CEOF shall provide 30 CES/CEV with Vandenberg AFB natural gas fuel consumption information. Quarterly reports shall include, but are not limited to, the amount of fuel consumed at all metering locations used by the natural gas utility company.

3.2.5.2. Propane: See Natural Gas. **Paragraph 3.2.4.1.**

### **3.3. Fuel Storage Tanks:**

3.3.1. Applicability. The requirements identified in this section apply to all fuel storage tanks located at Vandenberg AFB or other sites owned or operated by the 30th Space Wing.

3.3.2. Exemptions. Any fuel storage tank that meets at least one of the following conditions is exempt from the requirements identified in this section:

3.3.2.1. Fuel storage tanks having a capacity of 55 gallons or less are exempt. Fuel storage tanks located on motor vehicles, cargo vessels, and portable equipment are exempt.

3.3.2.2. Abandoned fuel storage tanks provided they contain no fuel.

3.3.3. SI Accounts. EMs shall maintain an accurate and up-to-date inventory of all fuel storage tanks that are subject to this section. Inventories shall be maintained in SI Accounts in accordance with the provisions of **Section 2**.

3.3.4. Record Keeping and Reporting. The recordkeeping and reporting requirements specified below apply to tanks located at Vandenberg AFB. **Note:** All record keeping and reporting shall be in compliance with all federal, state and local regulations.

3.3.4.1. Fuel Deliveries. EMs and operators of fuel storage tanks shall maintain records on all fuel deliveries, including the amount of fuel delivered, the date it was delivered, and the tank location.

3.3.4.2. Higher Heating Value and Sulfur content. EMs and operators of fuel storage tanks shall obtain manufacturer or supplier documentation on the fuel's higher heating value and sulfur content. This documentation is required on an annual basis.

3.3.4.3. Centrally Managed Fuels. On a quarterly basis, 30 CES/CEOE shall provide 30 CES/CEV with propane fuel delivery information supplied under the respective service contract. Propane delivery information shall include the amount of propane delivered, the date it was delivered, and the delivery location.

3.3.4.4. Reporting. EMs and operators of fuel storage tanks shall compile all recordkeeping logs maintained pursuant to this section and submit them to 30 CES/CEV. Unless otherwise specified, reports shall be submitted to 30 CES/CEV no later than 15 days following the end of each calendar year.

### **3.4. Abrasive Blasting Equipment:**

3.4.1. Applicability. The requirements identified in this section apply to all abrasive blasting equipment operated at Vandenberg AFB and other sites owned or operated by the 30th Space Wing.

3.4.2. Exemptions: None.

3.4.3. SI Accounts. EMs shall maintain an accurate and up-to-date inventory of all abrasive blasting equipment that is subject to this section. Inventories shall be maintained in SI Accounts in accordance with the provisions of **Section 2**.

3.4.4. Record Keeping and Reporting. The recordkeeping and reporting requirements specified below apply to abrasive blasting equipment operated at Vandenberg AFB and other sites owned or

operated by the 30 Space Wing. All recordkeeping and reporting shall be the responsibility of EMs and operators of abrasive blasting equipment. **Note:** All recordkeeping and reporting shall be in compliance with all federal, state and local regulations.

3.4.4.1. Record Keeping. Operators of abrasive blasting equipment shall track the type and quantities of abrasive blasting materials used during each calendar year using 30 SW Form 152, **Air Quality Recordkeeping Abrasive Blasting**.

3.4.4.2. Reporting. EMs and operators of abrasive blasting equipment shall compile all recordkeeping logs maintained pursuant to this section and submit them to 30 CES/CEV no later than 15 days following the end of each calendar year.

### 3.5. Degreasers:

3.5.1. Applicability. The requirements identified in this section apply to all degreasing equipment including parts washers that use ROC solvents used at Vandenberg AFB or other sites owned or operated by the 30th Space Wing.

3.5.2. Exemptions: None.

3.5.3. SI Accounts. EMs shall maintain an accurate and up-to-date inventory of all degreasers that are subject to this section. Inventories shall be maintained in SI Accounts in accordance with the provisions of **Section 2**.

3.5.4. Recordkeeping and Reporting. EMs and users of degreasing equipment shall comply with the recordkeeping and reporting requirements specified in **Section 4** for ROC-containing materials. **Note:** All record keeping and reporting shall be in compliance with all federal, state and local regulations.

### 3.6. Explosive Ordnance.

3.6.1. Applicability. The requirements identified in this section apply to explosive ordnance operations at Vandenberg AFB and other sites owned or operated by the 30th Space Wing.

3.6.2. Exemptions: None.

3.6.3. SI Accounts. EMs shall maintain an accurate and up-to-date inventory of all explosive ordnance operations that are subject to this section. Inventories shall be maintained in SI Accounts in accordance with the provisions of **Section 2**.

3.6.4. Record Keeping and Reporting. The recordkeeping and reporting requirements specified below apply to explosive ordnance operations at Vandenberg AFB. All recordkeeping and reporting shall be the responsibility of EMs and individuals that conduct explosive ordnance operations. **Note:** All recordkeeping and reporting shall be in compliance with all federal, state and local regulations.

3.6.4.1. Recordkeeping. Responsible individuals shall maintain records on all explosive ordnance events. Recordkeeping shall include the date that the detonation occurred, the type of explosive detonated, and the amount detonated. Records shall be maintained using 30 SW Form 161, **Air Quality Source Recordkeeping Explosive Ordnance Disposal**.

3.6.4.2. Reporting. EMs and individuals that conduct explosive ordnance operations shall compile all recordkeeping logs maintained pursuant to this section and submit them to 30 CES/CEV no later than 15 days following the end of each calendar year.

#### 4. ROC-Containing Materials:

##### 4.1. HazMart Materials:

4.1.1. Applicability. The requirements identified in this section apply to hazardous materials tracked by the Vandenberg AFB HazMart.

4.1.2. Exemptions: None.

4.1.3. Material ROC and Density. The determination, verification, and tracking of product density and ROC content shall be the joint responsibility of 30 CES/CEV and HazMart. HazMart shall provide 30 CES/CEV with MSDS information on all new hazardous materials, as specified below in **Paragraph 4.1.4**. 30 CES/CEV shall review the MSDS information and determine the density and ROC content of each product and forward this information back to HazMart for entry into the hazardous material information management system. Material density and ROC content shall be assessed on a monthly basis for all new materials that are received by HazMart.

4.1.4. Reports:

4.1.4.1. MSDS Report. HazMart shall provide 30 CES/CEV with MSDS information on all new products received on a monthly basis. The MSDS Report shall include the MSDS identification number, the date of the MSDS, the product name, the manufacturer, the product NSN, the product density (if available), the product ROC content (if available), the CAS numbers of all constituents, and the percent content of all constituents. The MSDS Report shall be provided in to 30 CES/CEV, in electronic format, within 14 days following the end of each calendar month.

4.1.4.2. Material Usage Report. HazMart shall provide 30 CES/CEV with material usage information for each shop on a monthly basis. The Material Usage Report shall include the MSDS identification number, the amount of each product used, and a description on how each product was used. The report shall be provided to 30 CES/CEV, in electronic format, within 14 days following the end of each calendar quarter.

4.1.4.3. Shop Report. HazMart shall provide 30 CES/CEV with updated information on the shops that are enrolled with the HazMart. The Shop Report shall include all shop codes, the corresponding shop name, and the name and telephone number of the shop point of contact. The shop listing shall be provided to 30 CES/CEV, in electronic format, on a quarterly basis.

##### 4.2. Non-HazMart Materials:

4.2.1. Applicability. The requirements identified in this section apply to all ROC-containing materials used at Vandenberg AFB or other sites owned or operated by the 30th Space Wing. Specifically, the requirements identified in this section apply to the following eight source categories:

4.2.1.1. General Surface Coatings. A General Surface Coating is any paint, stain, shellac, varnish, wood preservative, sealer, primer, curing compound, reducer, thinner, or any other surface coating material applied to any non-architectural substrate. Surface coatings applied to metal parts and products, motor vehicles, mobile equipment, aerospace vehicles, and wood products, are examples of a General Surface Coating. General Surface Coatings are always applied in conjunction with a paint booth and requires an APCD permit. Painting outside a permitted booth is allowed but requires APCD approval.

4.2.1.2. Architectural Surface Coatings. An Architectural Surface Coating is any paint, stain,

shellac, varnish, wood preservative, sealer, primer, curing compound, reducer, thinner, or any other surface coating material applied to an architectural structure. Surface coatings applied to buildings, towers, aboveground tanks, roads, and parking lots are examples of Architectural Surface Coatings. The use of Architectural Surface Coatings does not require an APCD permit.

4.2.1.3. Miscellaneous Products. A Miscellaneous Product is any ROC-containing material that is not a surface coating or a solvent. Glues, adhesives, herbicides, and pesticides are examples of Miscellaneous Products.

4.2.1.4. Solvent Cleaning. Solvent Cleaning is any operation where a solvent is applied to a surface, usually by rag or sponge, for the purpose of removing dirt and contaminants.

4.2.1.5. Solvent Batch Processes. A Solvent Batch Process is any operation that uses of solvents for any purpose other than solvent cleaning and degreasing. Film processing, electrolytic plating, and chromate conversion coating operations are examples of Solvent Batch Processes.

4.2.1.6. Degreasers. A Degreaser is defined as any piece of equipment designed to hold or dispense a solvent for the purpose of cleaning parts including parts washers.

4.2.1.7. Cutback Asphalt. A Cutback Asphalt is any paving grade asphalt liquefied with a petroleum distillate. Cutback Asphalts are typically classified as rapid cure, medium cure, or slow cure.

4.2.1.8. Emulsified Asphalt. An Emulsified Asphalt is any asphalt liquefied with water containing an emulsifier. The two most common types of emulsions are anionic and cationic.

4.2.2. Exemptions. Materials that do not contain ROC's are exempt. The following ROC-containing materials are exempt from the requirements identified in this section:

4.2.2.1. Materials tracked by the Vandenberg AFB HazMart are exempt.

4.2.2.2. Office supplies, such as white-out, white board cleaner, contact cement, and magic markers are exempt.

4.2.2.3. Janitorial cleaning products are exempt.

4.2.2.4. Materials that are stored, but not used at Vandenberg AFB or other sites owned or operated by the 30th Space Wing are exempt.

4.2.3. MSDS Repository. 30 CES/CEV shall administer a Material Safety Data Sheet (MSDS) Repository for all ROC-containing materials subject to this section. Only those ROC-containing materials that have been entered into the MSDS Repository are authorized to be utilized on Vandenberg AFB and all other sites owned and operated by the 30th Space Wing. Items cannot be utilized prior to obtaining authorization from the repository.

4.2.3.1. Establishment of Accounts. EMs shall establish a MSDS Repository Account by letter with 30 CES/CEV for all ROC-containing materials that are used by individuals within the EMs functional area of responsibility. To establish an MSDS Repository Account, the EMs shall submit to 30 CES/CEV the MSDS's of all ROC-containing materials subject to this section.

4.2.3.2. Upkeep of Accounts. EMs shall submit to 30 CES/CEV the MSDS's of all new mate-



rials, as they are obtained. On an annual basis, 30 CES/CEV shall provide EMs with a listing of all materials that have been entered into their MSDS Repository Account. Within 30 days of receiving the MSDS Repository Account Listing, EMs shall submit to 30 CES/CEV any new MSDS's that do not appear on the listing and request they be added to their account.

4.2.4. Record Keeping and Reporting. EMs and users of ROC-containing materials shall comply with the recordkeeping and reporting requirements specified below. 30 SW Form 153 **Air Quality Recordkeeping ROC-Containing Materials**, shall be used for ROC- containing materials recordkeeping. **Note:** All record keeping and reporting shall be in compliance with all federal, state and local regulations.

4.2.4.1. Quantities Used. Users of ROC-containing materials shall monitor and record the quantities of materials used. Acceptable methods of monitoring material usage include (1) maintaining purchase records and (2) estimating and recording material usage on a daily basis. Usage information shall be monitored and recorded separately for each of the source categories identified above in **Paragraph 4.2.1**. Material usage shall be totaled on a calendar year basis.

4.2.4.2. ROC Data. Users of ROC-containing materials shall maintain records on the ROC content of their materials. ROC data shall be maintained by either (1) recording the ROC content of the material in units of pounds per gallon (lbs/gal) or grams per liter (g/l), or (2) recording the percentage (by weight) of ROC contained in the material and recording the material density or specific gravity.

4.2.4.3. Annual Report. At the end of each calendar year, EMS and users of ROC-containing materials shall review all recordkeeping logs maintained pursuant to this section and submit a summary of material ROC and usage information to 30 CES/CEV. Unless otherwise approved by 30 CES/CEV, material ROC and usage information shall be reported using the forms identified below. Annual reports are due no later than 30 days following the end of each calendar year.

**4.3. Forms Prescribed.** 30 SW Form 152, **Air Quality Recordkeeping Abrasive Blasting**, 153, **Air Quality Recordkeeping ROC-Containing Materials**, 154, **Air Quality Source Profiling Abrasive Blasting Equipment**, 155, **Air Quality Source Profiling Boilers and Hot Water Heaters**, 156, **Air Quality Source Profiling Internal Combustion Engine**, 157, **Air Quality Source Profiling Fuel Storage Tanks**, 158, **Air Quality Source Profiling Degreasers**, 159, **Air Quality Source Profiling General Emission Source**, 160, **Air Quality Source Recordkeeping Fuel Storage Tanks**, and 161, **Air Quality Source Recordkeeping Explosive Ordnance Disposal**.

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**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****Abbreviations and Acronyms***

**APCD**—Air Pollution Control District

**BTU/HR**—British Thermal Units per hour

**CARB**—California Air Resources Board

**Combustion Units**—Fuel fired boilers and hot water heaters

**EMs**—Environmental Managers

**FUMP**—Fuel Use Monitoring Plan

**HAZMART**—Hazardous Materials

**MSDS**—Material Safety Data Sheets

**ROC**—Reactive Organic Compound

**SI**—Source Inventory accounts

**VOC**—Volatile Organic Compound

**30—th CES/CEV**—30<sup>th</sup> Civil Engineering Squadron Environmental Section

**30—th CES/CEOE**—30<sup>th</sup> Civil Engineering Squadron Maintenance Engineering Section

**30—th CES/CEOF**—30<sup>th</sup> Civil Engineering Squadron Facility Maintenance Section